

Work Order ID 148002

Friday, June 17, 2016 8:02:53 AM

148002 LH

Page 1

Item ID: D205-634-145

Accept

N900040100

Setup Start

N.S.1

Revision ID:

Item Name: Replacement Skidtube with Thru-Bolt Standard Wearplates Fits LH or RH

Stop *N.S.2*

Start Date: 7/5/2016 Start Qty: 1.00

1

Cust Item ID:

Required Date: 7/13/2016 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: PLS

Date: JUN 21 2016 Tooling:

Date:

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

NR1

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

D2580-049

G

IIN-D205-634

REV H

100

Document Control

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Doc. Control -USB or Paperwork

Photocopy D205-634 bluefile & type labels per PPP D205-634-145 CHG001

DAS
27
9-89

DAS
21
9-89

DEC 06 2016

DEC 06 2016

110

110

Skidtubes

0.00

Skidtubes

Memo

0.05

Skidtubes

1- PICK D2580-1

2- SPOT DRILL 2 AFT RUN ON WEARPLATE HOLES USING DT10021,
DRILL 3.630" HOLES USING DT8462 (83.94" FROM AFT OF D2580-1 REF
ONLY)

16-7-25
21/11/15

B148002

DQA:

Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed:

Date: _____

Work Order update only


DART
AEROSPACE

Work Order: _____ Part No. _____ NCR No. _____ Date: _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐ Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐		AGAINST DEPARTMENT/PROCESS QTY Effective : _____ Step #: _____ MRB (QSI042) Approval _____		Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____																																																																																																																																																											
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Work Order ID 148002
Friday, June 17, 2016 8:02:53 AM

148002

Page 2

Item ID: D205-534-145 Accept *N9000040100* Setup Start *NS1*
Revision ID: Replacement Skidtube with Thru-Bolt Standard Wearplates Fits LH or RH Stop *NS2*
Item Name: Start Date: 7/5/2016 Start Qty: 1.00 *1* Cust Item ID:
Required Date: 7/13/2016 Req'd Qty: 1.00 *1* Customer:
Reference:

Approvals: Process Plan: Date: Tooling: Date: Run Start *NR1*
QC: Date: SPC (Y/N): Date: Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	BENDING MACHINE - SKIDTUBES	0.01							
120		0.07							
CNC Bend 1	Memo								
CNC Delta 100 Bender	1-Bend as per program D2580.C on CNC Bender and Folio FT 16								
	2-Cut tubes as per Dwg. D2580								
	3- Scribe batch# in aft end of tube								

16-7-25/Alc/HG

130 Skidtubes 0.00
130 Skidtubes 0.36
Memo

1-Debur ends after cutting and remove bending marks. Prepare tube for welding D2576-3 step remove alodine as required.
2-Locating from most fwd saddle hole, drill most fwd wearplate hole using DT9793 (10.832 RHF) as per dwg D2580 sheet 7.
3-Open run-on wearplate holes to finished size 0.508" at locations (5.338/ 5.985/ 10.832/ 3.63 RHF) as per dwg D2580 sheet 7.
4-Drill pilot holes for aft cap using DT8215, Open to finished size.

16-7-26/HG/Alc



DQA: _____ Date: _____
QA Closed: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

Work Order update only

DISPOSITION		AGAINST DEPARTMENT/PROCESS			
Work Order: _____ Part No. _____ NCR No. _____ Date: _____ Step #: _____		QTY Effective : _____			
Description Work Order Deviation		Disposition			
Environment		Positioned Wrong			
Design		Outside Dimensions			
Doc/Data		Over/Under tolerance			
Equip/Tooling		Part Incorrect			
Handling/Pre		Part Lost/Missing			
Material		Part Moved			
Internal Transport		Drawing			
Tribal Knowledge		Finish			
LOA		Misread			
Substation		Turning Sequence			
Past Expiry Date					
Misidentified					
No Re-verification					
Operator					
Offset/Setup					
Supplier					
Training					
Use for Testing					
Poor Information					
Rushing					
Product Improvement					
Process Improvement					
Manufacturing Process					
Past Due					
OTHER :					
Pressure/Forced					
Bending					
Centre Not Concentric					
Cracks					
Crimp/Kink/Ripple/Wave					
Cuffs					
Crushing					
Heat Treat					
Wave/Twist in Tube					
Marks/Chatter					
Temperature/Cure					
Set-up					
BOM/Route					
Broken/Damage/Defect					
Inspection Incomplete/Unqualified					
Contamination					
Countersink					
Cut Too Short					
Instructions Incomplete/Unclear					
Drill Holes					
Power Loss/Surge					
Folio/Program					
Grain					
Weld					
Wrong Stock Pulled					
Out of Sequence					
Off-set					
Mislabeled					
Fit/Function					
Misaligned/off center					
Cross tube					
Small Fab					
Finishing					
Composite					
Skid-tube					
Machining					
Thermoforming					
Large Fab					
Rework					
Scrap					
Use-as-is					
Suspected Unapproved					
Water Jet					
Prod. Eng. Coord.					
Rec/Store/Packaging					
Supplier					
Engineering					
Quality					
Other					
MRB (QS1042) Approval					
Completed By					
Lead hand / Supervisor Approval Verification					
QC / QA Coordinator Approval					

Work Order ID 148002

Friday, June 17, 2016 8:02:53 AM

148002

Item ID: D205-634-145
Revision ID:

Accept

N9000040100

Setup Start *NS1*

Item Name: Replacement Skidtube with Thru-Bolt Standard Wearplates Fits LH or RH

Stop *NS2*

Start Date: 7/5/2016 Start Qty: 1.00

1

Cust Item ID:

Required Date: 7/13/2016 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

Stop

NR1
NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

140

QC5- Inspect part completeness to step on W/O

0.00

140

Memo

0.00

Quality Control

150

150

Skidtubes

0.00

Skidtubes

Memo

0.17

1-Weld step D2576 as per Dwg. D2580 and OSI 004
A/R Aluminum Rod
- Grind welds flush.

MB4826

BE16-07-26

2-Touch up alodine on run on wearplate holes prior to swaging

3- Insert D4202-1 spacer, swage as per OSI002 and trim/ grind flush per OSI002 and as per dwg

4-DRILL TOWING HOLE USING DT8091

5-DEBURR

1 6 16-07-26

Date:

Date:

WORK ORDER NON-CONFORMANCE / UPDATE

Work Order update only



Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION ☐ Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐ Skid-tube Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering Quality ☐ Other		AGAINST DEPARTMENT/PROCESS	
Date : _____		Step #: _____		QTY Effective : _____	
Description Work Order Deviation		Disposition		MRB (QS1042) Approval	
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	

Root Cause		FAULT CATEGORY									
Environment	No Re-verification	Pressure/Forced	Temperature/Cure	Power Loss/Surge	Positioned Wrong						
Design	Operator	Bending	Set-up	Folio/Program	Outside Dimensions						
Doc/Data	Offset/Setup	Centre Not Concentric	BOM/Route	Grain	Over/Under tolerance						
Equip/Tooling	Supplier	Cracks	Broken/Damage/Defect	Weld	Part Incorrect						
Handling/Pre	Training	Crimp/Kink/Ripple/Wave	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing						
Material	Use for Testing	Cuffs	Contamination	Out of Sequence	Part Moved						
Internal Transport	Poor Information	Crushing	Countersink	Off-set	Drawing						
Tribal Knowledge	Rushing	Heat Treat	Cut Too Short	Mislabeled	Finish						
LOA	Product Improvement	Wave/Twist in Tube	Instructions Incomplete/Unclear	Fit/Function	Misread						
Substation	Process Improvement	Marks/Chatter	Drill Holes	Misaligned/off center	Turning Sequence						
Past Expiry Date	Manufacturing Process										
Misidentified	Past Due	OTHER :									

Work Order ID 148002

Friday, June 17, 2016 8:02:53 AM

148002

Item ID: D205-634-145

Accept

Revision ID:

N900040100

Setup Start

N.S.1

Item Name: Replacement Skidtube with Thru-Bolt Standard Wearplates Fits LH or RH

Stop

N.S.2

Start Date: 7/5/2016

1

Cust Item ID:

Required Date: 7/13/2016

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

NR1

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool # Plan
Code

Accept Qty Reject Qty Reject Number Insp.
Stamp

160 QC *16N* QC

0.00

① 16-07-23

DAS 9 5-29

Quality Control

170 QC *17N* QC

0.00

① 16-07-23

DAS 9 9-29

Quality Control

180 Pressure Wash per OSI005 4.3

0.00

①

7/16/08/621
DAS 15 8-28

Hand Finish

Memo

0.10

8-28

Hand Finishing

DQA: _____ Date: _____
 QA Closed: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

Work Order update only



Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐ Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐		AGAINST DEPARTMENT/PROCESS		MRB (QS1042) Approval	
Date: _____ Step #: _____		QTY Effective : _____					
Description Work Order Deviation				Disposition			
Completed By				Lead hand / Supervisor Approval Verification			
QC / QA Coordinator Approval				MRB (QS1042) Approval			

Root Cause				FAULT CATEGORY													
Environment	No Re-verification	Operator	Offset/Setup	Pressure/Forced	Temperature/Cure	Power Loss/Surge	Positioned Wrong										
Design				Bending	Set-up	Folio/Program	Outside Dimensions										
Doc/Data				Centre Not Concentric	BOM/Route	Grain	Over/Under tolerance										
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Handling/Pre				Crimp/Kink/Ripple/Wave	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing										
Material				Cuffs	Contamination	Out of Sequence	Part Moved										
Internal Transport				Crushing	Countersink	Off-set	Drawing										
Tribal Knowledge				Heat Treat	Cut Too Short	Mislabeled	Finish										
LOA				Wave/Twist in Tube	Instructions Incomplete/Unclear	Fit/Function	Misread										
Substation				Marks/Chatter	Drill Holes	Misaligned/off center	Turning Sequence										
Past Expiry Date																	
Misidentified																	
				OTHER :													

Work Order ID 148002

Friday, June 17, 2016 8:02:53 AM

148002

Item ID: D205-634-145

Accept

Revision ID:

N9000040100

Setup Start

NS1

Item Name: Replacement Skidtube with Thru-Bolt Standard Wearplates Fits LH or RH

Stop

NS2

Start Date: 7/5/2016

1

Cust Item ID:

Required Date: 7/13/2016

1

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

NR1

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool # Plan
Code

Accept
Qty

Reject
Qty

Reject
Number Insp.
Stamp

190 White Gloss(Ref:4.3.5.1) per OSI005 4.3-Alum

100

Powdercoat

Memo

0.03

Powder Coating

START TIME: 10:35
OVEN TEMPERATURE: 225
FINISH TIME: 11:05

200

QC3-Inspect Part Finish

0.00

200

QC

Memo

0.00

Quality Control

1641 d 100 161113015
DAS 15

1 1611-29. 3378

Work Order ID 148002

148002

Friday, June 17, 2016 8:02:53 AM

Item ID: D205-634-145

Accept

Revision ID:

N9000040100

Setup Start

NS1

Item Name: Replacement Skidtube with Thru-Bolt Standard Wearplates Fits LH or RH

Stop

NS2

Start Date: 7/5/2016

1

Cust Item ID:

Required Date: 7/13/2016

1

Customer:

Reference:

Approvals: Process Plan:

Date: Tooling:

Date:

QC: Date: SPC (Y/N):

Date:

Run Start

NR1

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool # Plan
Code

Accept
Qty

Reject
Qty

Reject
Number Insp.
Stamp

210

210

HandFinish

Memo

0.15

Hand Finishing

1-Install inserts & wearplates as per Dwg. D2580. Use a drop of Sikaflex on insert holes before installing wearplates
A/R Sikaflex-291
Sikaflex expire date: 11/16/09

2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594

3-Install aft cap as per dwg

4-Wing walk as per dwg Batch# 1413581

220

220

QC

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

Quality Control

Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024

16-12-61

DAS 9 2-89

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only



Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐ Skid-tube Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering Quality ☐ Other ☐		AGAINST DEPARTMENT/PROCESS MRB (QS1042) Approval					
Date: _____ Step #: _____		QTY Effective: _____							
Disposition									
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Misidentified	Past Due										
		OTHER : _____									

Work Order ID 148002
Friday, June 17, 2016 8:02:53 AM

148002

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Item ID: D205-634-145 Accept *N9000040100* Setup Start *N.S1*
Revision ID: Replacement Skidtube with Thru-Bolt Standard Wearplates Fits LH or RH Stop *N.S2*
Item Name: Start Date: 7/5/2016 Start Qty: 1.00 *1* Cust Item ID:
Required Date: 7/13/2016 Req'd Qty: 1.00 *1* Customer:
Reference:

Approvals: Process Plan: Date: Tooling: Date: Run Start *NR1*
QC: Date: SPC (Y/N): Date: Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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230 *230* Packaging Memo 0.00
Identify and pack for shipping as per PPRD205-634-145
Location : FG073

DEC 06 2016

240 *240* QC Memo 0.02
QC21 - Final Inspection - Work Order Release

DAS 21 9-89 DEC 06 2016

DAS 21 9-89 DEC 06 2016

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐ Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐		AGAINST DEPARTMENT/PROCESS		MRB (QS1042) Approval	
Date: _____ Step #: _____		QTY Effective: _____					
Description Work Order Deviation							
Disposition							
Completed By							
Lead hand / Supervisor Approval Verification							
QC / QA Coordinator Approval							
FAULT CATEGORY							
Root Cause							
Environment	No Re-verification	Pressure/Forced	Temperature/Cure	Power Loss/Surge	Positioned Wrong		
Design	Operator	Bending	Set-up	Folio/Program	Outside Dimensions		
Doc/Data	Offset/Setup	Centre Not Concentric	BOM/Route	Grain	Over/Under tolerance		
Equip/Tooling	Supplier	Cracks	Broken/Damage/Defect	Weld	Part Incorrect		
Handling/Pre	Training	Crimp/Kink/Ripple/Wave	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing		
Material	Use for Testing	Cuffs	Contamination	Out of Sequence	Part Moved		
Internal Transport	Poor Information	Crushing	Countersink	Off-set	Drawing		
Tribal Knowledge	Rushing	Heat Treat	Cut Too Short	Mislabeled	Finish		
LOA	Product Improvement	Wave/Twist in Tube	Instructions Incomplete/Unclear	Fit/Function	Misread		
Substation	Process Improvement	Marks/Chatter	Drill Holes	Misaligned/off center	Turning Sequence		
Past Expiry Date	Manufacturing Process						
Misidentified	Past Due						
		OTHER: _____					

Picklist Print

Friday, June 17, 2016 8:02:52 AM

Work Order ID: 148002

148002

Parent Item: D205-634-145

D205-634-145

Parent Item Name: Replacement Skidtube with Thru-Bolt Standard Wearplates Fis LH or RH

Start Date: 7/5/2016

Required Date: 7/13/2016

Start Qty: 1.00

Required Qty: 1.00

Comments: IPF REV-A 14.04.23 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D2580-1 Manufactured No Each 1.0000 1

D2580-1

205 Bent Tube

Location 147600 Loc Qty Loc Code

16-7-25

LC002 145012 1 1

D4202-1 Manufactured No Each 534.0000

D4202-1

Spacer

Location Loc Qty Loc Code

LC001 141708 534 88

145902

446

234.0000

24

16-7-27 HG

D2594-1 Manufactured No Each 234.0000

D2594-1

Plug

Location Loc Qty Loc Code

FP001 234 68

145971

118

25

8

16-7-27 HG

145971

118

25

8

16-7-27 HG

145971

118

25

8

16-7-27 HG

145971

118

25

8

16-7-27 HG

145971

118

25

8

16-7-27 HG

145971

118

25

8

16-7-27 HG

145971

118

25

8

16-7-27 HG

145971

118

25

8

16-7-27 HG

[illegible]

Picklist Print

Friday, June 17, 2016 8:02:53 AM

Work Order ID: 148002

148002

Parent Item: D205-634-145

D205-634-145

Parent Item Name: Replacement Skidtube with Thru-Bolt Standard Wearplates Fits LH or RH

Start Date: 7/5/2016

Required Date: 7/13/2016

Start Qty: 1.00

Required Qty: 1.00

D2576-3

Manufactured

No

Each

42.0000

1

D2576-3

Step (Machining Detail)

Location

Loc Qty

Loc Code

LG001

136730

142485

144673

42

1

1

40

Each

328.0000

8

05-16-07-216

**

D2594-3

O-Ring

Manufactured

No

Location

Loc Qty

Loc Code

FP001

135859

138060

140770

141703

328

24

2

2

300

Each

34.0000

1

B145268

48

D2855

Cap

Manufactured

No

Location

Loc Qty

Loc Code

FP001

134027

137568

34

6

28

B147805

21

05-16-07-216

**

Date: _____

Date:

WORK ORDER NON-CONFORMANCE / UPDATE

Work Order update only



Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework Scrap Use-as-is Suspected Unapproved		AGAINST DEPARTMENT/PROCESS Skid-tube Machining Thermoforming Large Fab Cross tube Small Fab Finishing Composite Water Jet Prod. Eng. Coord. Rec/Store/Packaging Supplier Engineering Quality Other							
Date : _____		Step #: _____		QTY Effective : _____				MRB (QSI042) Approval			
Description Work Order Deviation				Disposition				Completed By			
								Lead hand / Supervisor Approval Verification			
								QC / QA Coordinator Approval			

Root Cause		FAULT CATEGORY									
Environment	No Re-verification	Pressure/Forced	Temperature/Cure	Power Loss/Surge	Positioned Wrong						
Design	Operator	Bending	Set-up	Folio/Program	Outside Dimensions						
Doc/Data	Offset/Setup	Centre Not Concentric	BOM/Route	Grain	Over/Under tolerance						
Equip/Tooling	Supplier	Cracks	Broken/Damage/Defect	Weld	Part Incorrect						
Handling/Pre	Training	Crimp/Kink/Ripple/Wave	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing						
Material	Use for Testing	Cuffs	Contamination	Out of Sequence	Part Moved						
Internal Transport	Poor Information	Crushing	Countersink	Off-set	Drawing						
Tribal Knowledge	Rushing	Heat Treat	Cut Too Short	Mislabeled	Finish						
LOA	Product Improvement	Wave/Twist in Tube	Instructions Incomplete/Unclear	Fit/Function	Misread						
Substation	Process Improvement	Marks/Chatter	Drill Holes	Misaligned/off center	Turning Sequence						
Past Expiry Date	Manufacturing Process										
Misidentified	Past Due										
		OTHER :									

Picklist Print

Friday, June 17, 2016 8:02:53 AM

Work Order ID: 148002

148002

Parent Item: D205-634-145

D205-634-145

Parent Item Name: Replacement Skidbte with Thru-Bolt Standard Wearplates Fits LH or RH

Start Date: 7/5/2016

Required Date: 7/13/2016

Start Qty: 1.00

Required Qty: 1.00

AN3-5A

Purchased

No

Each

172.0000

2

AN3-5A

Bolt

**

2611130

Location

Loc Qty

Loc Code

HP001

m133686

2

M135008

42

m134055

2

ST350

m134502

168

NAS1149D0332J

Purchased

No

Each

1,108.000

2

NAS1149D0332J

Washer

**

1611130

Location

Loc Qty

Loc Code

CA

m129682

6

FP001

m134502

16

ST260a

m134848

564

ST264

m134502

24

m134738

498

D5061-1

Manufactured

No

Each

5.0000

1

D5061-1

Fwd Wearplate

**

1611130

Location

Loc Qty

Loc Code

FP002

143869

5

B151642

41

Friday, June 17, 2016 8:02:53 AM

Shop Packet Print

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐ Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐	AGAINST DEPARTMENT/PROCESS	Step #: _____ QTY Effective : _____ MIRB (QS1042) Approval _____
Description Work Order Deviation		Disposition	
Completed By		Lead hand / Supervisor Approval Verification	
QC / QA Coordinator Approval		Fault Category	

Root Cause				Fault Category			
Environment	No Re-verification	Pressure/Forced	Temperature/Cure	Power Loss/Surge	Positioned Wrong		
Design	Operator	Bending	Set-up	Folio/Program	Outside Dimensions		
Doc/Data	Offset/Setup	Centre Not Concentric	BOM/Route	Grain	Over/Under tolerance		
Equip/Tooling	Supplier	Cracks	Broken/Damage/Defect	Weld	Part Incorrect		
Handling/Pre	Training	Crimp/Kink/Ripple/Wave	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing		
Material	Use for Testing	Cuffs	Contamination	Out of Sequence	Part Moved		
Internal Transport	Poor Information	Crushing	Countersink	Off-set	Drawing		
Tribal Knowledge	Rushing	Heat Treat	Cut Too Short	Mislabeled	Finish		
LOA	Product Improvement	Wave/Twist in Tube	Instructions Incomplete/Unclear	Fit/Function	Misread		
Substation	Process Improvement	Marks/Chatter	Drill Holes	Misaligned/off center	Turning Sequence		
Past Expiry Date	Manufacturing Process						
Misidentified	Past Due						
OTHER : _____							

Picklist Print

Friday, June 17, 2016 8:02:53 AM

Work Order ID: 148002

Parent Item: D205-634-145

Parent Item Name: Replacement Skidtube with Thru-Bolt Standard Wearplates Fits LH or RH

148002
D205-634-145

Start Date: 7/5/2016

Required Date: 7/13/2016

Start Qty: 1.00

Required Qty: 1.00

D5061-3

Manufactured

No

Each

5.0000

1

D5061-3

Air Wearplate

Location

Loc Qty

Loc Code

FP002

143870

5

B148191

AN4-45A

Purchased

No

Each

46.0000

8

AN4-45A

BOLT

Location

Loc Qty

Loc Code

FP001

m134134

16

X1135127

D2570

Manufactured

No

Each

193.0000

16

D2570

Bushing

Location

Loc Qty

Loc Code

FG

88781

12

B147345

FP001

141497

12

B150641

ST008

145727

47

X5

134

134

134

X11

Each

2.0000

8

MS21042-4

MS21042L4

Purchased

No

Each

2.0000

8

MS21042-4

Nut / use MS21042L4

Location

Loc Qty

Loc Code

ST304

9063

2

M133363

X2

Friday, June 17, 2016 8:02:53 AM

Shop Packet Print



DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____ Work Order update only ☐

Work Order: _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS									
Part No. _____		Rework Scrap Use-as-is Suspected Unapproved		Skid-tube Machining Thermoforming Large Fab		Cross tube Small Fab Finishing Composite		Water Jet Prod. Eng. Coord. Rec/Store/Packaging Supplier		Engineering Quality Other			
NCR No. _____													
Date: _____		Step #: _____		QTY Effective: _____		MRR (QS1042) Approval							
Description Work Order Deviation				Disposition									
												Completed By	
												Lead hand / Supervisor Approval Verification	
												QC / QA Coordinator Approval	
Root Cause				FAULT CATEGORY									
Environment	No Re-verification	Pressure/Forced	Temperature/Cure	Power Loss/Surge	Positioned Wrong								
Design	Operator	Bending	Set-up	Folio/Program	Outside Dimensions								
Doc/Data	Offset/Setup	Centre Not Concentric	BOM/Route	Grain	Over/Under tolerance								
Equip/Tooling	Supplier	Cracks	Broken/Damage/Defect	Weld	Part Incorrect								
Handling/Pre	Training	Crimp/Kink/Ripple/Wave	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing								
Material	Use for Testing	Cuffs	Contamination	Out of Sequence	Part Moved								
Internal Transport	Poor Information	Crushing	Countersink	Off-set	Drawing								
Tribal Knowledge	Rushing	Heat Treat	Cut Too Short	Mislabeled	Finish								
LOA	Product Improvement	Wave/Twist in Tube	Instructions Incomplete/Unclear	Fit/Function	Misread								
Substation	Process Improvement	Marks/Chatter	Drill Holes	Misaligned/off center	Turning Sequence								
Past Expiry Date	Manufacturing Process												
Misidentified	Past Due												
OTHER : _____													

LIST OF MATERIALS				PART NUMBER	DESCRIPTION
ITEM	QTY	QTY	QTY		
441	445	447	448		
1	X			D2580-041	SKIDTUBE ASSEMBLY
2		X		D2580-045	SKIDTUBE ASSEMBLY
3			X	D2580-047	SKIDTUBE ASSEMBLY
4			X	D2580-048	SKIDTUBE ASSEMBLY
20	1	1	1	D2580-180	EXTRUSION
21		16	16	D2580-180	BUSHING
22	1	1	1	D2580-3	SPACER
23		4	4	D2580-1	SPACER
24	16	8	8	D2580-41	PLUG
25	18	8	8	D2580-43	O-RING
26	1	1	1	D2580-6	205 WEB
27	1	1	1	D2580-5	AFT CAP
28	1	1	1	D2580-45	WEARSHOE
29	1	1	1	D2580-9	WEARSHOE
30	1	1	1	D2580-11	WEARSHOE
31	1	1	1	D2580-13	WEARSHOE
32	2	2	2	D2580-1	GASKET
33	1	1	1	D2580-5	GASKET
34	1	1	1	D2580-13	GASKET
35	20	20	24	D2580-1	SPACER
36			1	D4008-041	WEARPLATE ASSEMBLY
37			1	D4008-043	WEARPLATE ASSEMBLY
37			1	D5081-1	FWD WEARPLATE
37			1	D5081-3	AFT WEARPLATE
50	50	50		AL87-1032-130 or ANSCA-1032-130 or ANSCA-1032-130	INSERT
51	50	50		ANSCA	BOLT
52	2	2	2	ANSCA	BOLT
53			8	ANSCA	BOLT
54	50	50		WAS11480C32R	WASHER (AN880C10)
55	2	2	2	WAS11480C32R	WASHER (AN880C10)
56			8	MS21042-4	NUT (OR MS21042-4)

GENERAL NOTES:

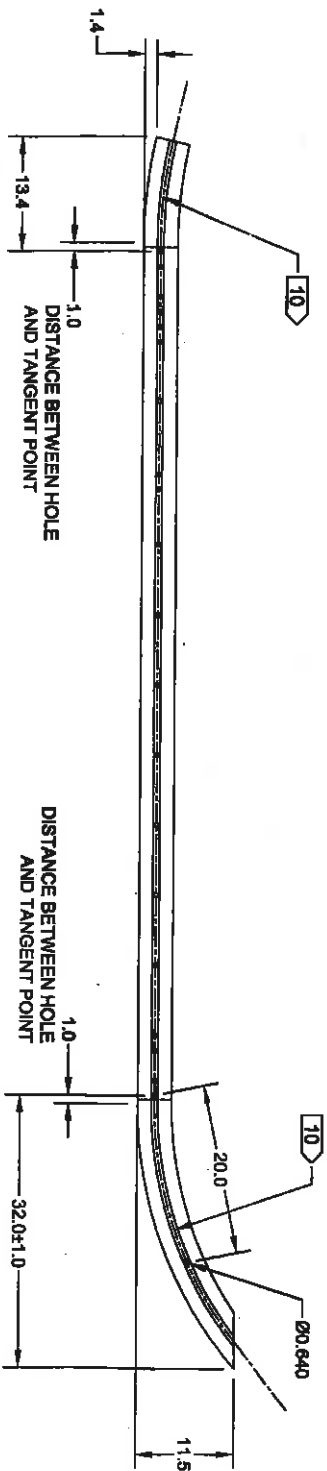
- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION PER DART OSI 005 4.1 PRIOR TO INSERTING D2580 WEB POWDER COAT ASSEMBLY (D411047/048) GLOSS WHITE (REF 4.3.5.1) PER DART OSI 005 4.3
- 3) TOLERANCES ARE PER DART OSI 018 UNLESS OTHERWISE NOTED.
- 4) BLACK ANTI-RUST PAINT AS INDICATED PER DART OSI 005 4.4.
- 5) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 6) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 7) WEIGHT: D2580-041 = 34.5 lbs
D2580-045 = 46.1 lbs
D2580-047 = 46.1 lbs
D2580-048 = 52.0 lbs
- 8) WELDING PER DART OSI 004.
- 9) INSERT D2580 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO CUTTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART OSI 015 BEFORE BONDING. ENSURE HOLES LINE-UP.
- 10) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 80 AND ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 11) USE DART DRILL TEMPLATE D78217 & D78887 ONLY FOR D2580-041/045 TO LOCATE AND DRILL 20.287 HOLES FOR WEARSHOE INSERTS. INSTALL AL87-1032-130 PER SECTIONS B-5 AND F-6 (60 PLACES) AFTER FINISH. INSTALL ANSCA BOLTS AND WAS11480C32R WASHERS WITH SIKAFLEX-241-2M.
- 12) INSERT D2580-1 PLUG C/W D2580-43 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES FOR D2580-041/045 AND 8 PLACES FOR D2580-047/048)
- 13) IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2580 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

ENGINEERING
UNCONTROLLED COPY
RESPECT TO AMENDMENT

WITHOUT NOTICE
WORK ORDER
NO 17802 MJS
1606-21

REV.	DESCRIPTION	DATE
G	ADDED -048, -047 WEIGHT UPDATED PER D88 5598	14.04.09
F	INCORPORATE DESO D2580-E-1 PER PART 12-216	13.06.20
E	ADD D2580-047 (2N C4-7) AND D2580-7 (2N B3-8). INCLUDED DESO D2580-D-1; REFORMATTED DRAWING TO CURRENT STANDARDS. D78217 & D78887 WAS D2587-205 (2N C4-1)	11.08.21
D	CHANGE TO 58 WEARPLATES AND GASKETS.	07.04.05
C	INCLUDE DESO 812M 8183	07.04.05
B	REDRAWN. INCLUDED DESO 809M 8097	06.12.02
A	AS MANUFACTURED	06.08.16
DESIGN	DS	BY
DRAWN	ALS	DATE
CHECKED	ALS	
MFG. APPR.	N	
APPROVED	ALS	
DATE	14.04.09	
TITLE		
205 SKIDTUBE ASSEMBLY		
SCALE		
NTS		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		
DRAWING NO. D2580		
REV. 0		
SHEET 1 OF 9		
COPYRIGHT © 1988 BY DART AEROSPACE LTD		
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RELEASED
N 2014-04-29



D2580-1 BENT TUBE
(MAKE FROM D2580-10 TUBE)

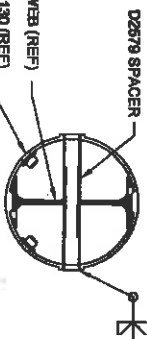
DESIGN	DS	DART AEROSPACE LTD
DRAWN	AJB	HAMPSHIRE, ONTARIO, CANADA
CHECKED	AJB	DRAWING NO.
MFG. APPR.	AJB	D2580
APPROVED	WJB	REV. G
DE APPR.	WJB	SHEET 3 OF 9
DATE	14.04.09	SCALE
		NTS

RELEASED
2014-01-29

AFTER DRILLING AND BENDING ASSEMBLY PERFORM THE FOLLOWING FOR Ø0.608 HOLES ONLY:

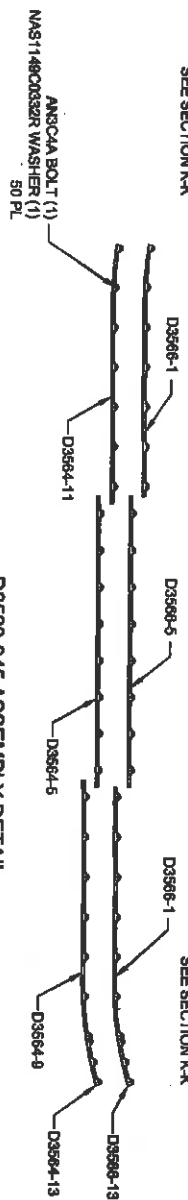
1. CHAMFER HOLE 0.060 X .40°
2. INSERT D579 SPACER (4 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. DO NOT CBORE

SECTION K-K
SCALE 5X

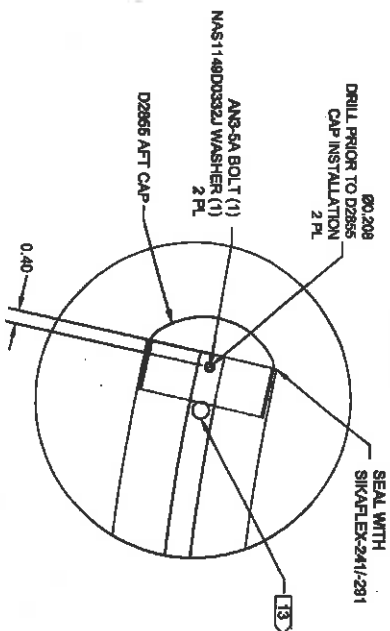


D2586 WEB (REF)
ALST-1032-130 (REF)
(TYP 50 PLACES)
11

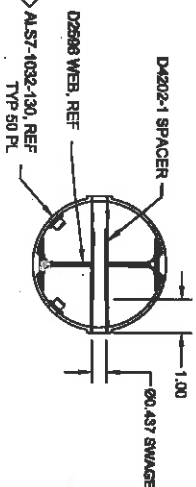
D2580-045 ASSEMBLY DETAIL



DETAIL E D74
SCALE 5X



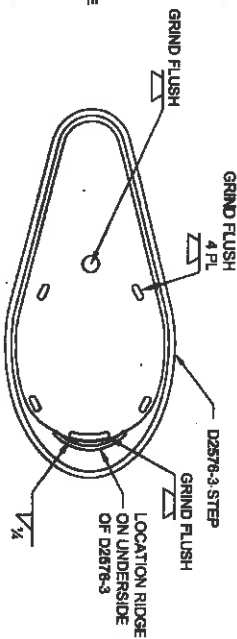
SECTION F-F
SCALE 5X



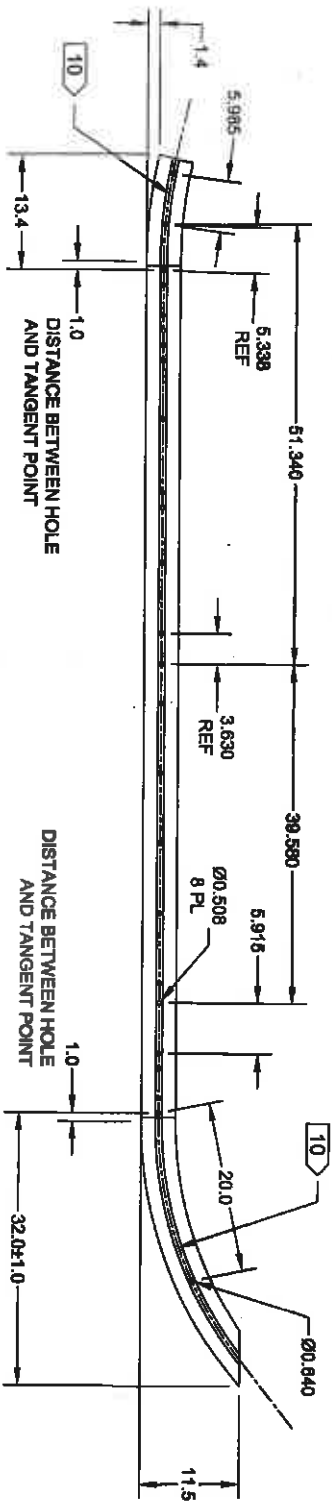
AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:

1. INSERT DA202-1 SPACER (20 PLACES)
2. SWAGE TO Ø0.437 X 1.00 DEEP PER CSI 002
3. TRIM/GRIND FLUSH PER CSI 002

DETAIL G
SCALE 5X



DESIGN		DS	DART AEROSPACE LTD	
DRAWING		AS	HAMMERSLEY, ONTARIO, CANADA	
CHECKED		AW	DRAWING NO.	REV. G
MFG. APPR.			D2680	SHEET 4 OF 8
APPROVED				SOURCE
DE APPR.			TITLE	NTS
DATE		14.04.09	205 SKIDTUBE ASSEMBLY	
COPYRIGHT © 1988 BY DART AEROSPACE LTD THIS DRAWING IS THE PROPERTY OF DART AEROSPACE LTD AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WITHOUT PERMISSION IN WRITING FROM DART AEROSPACE LTD				



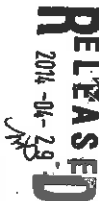
D2580-5 BENT TUBE
(MADE FROM D2580-101 TUBE)

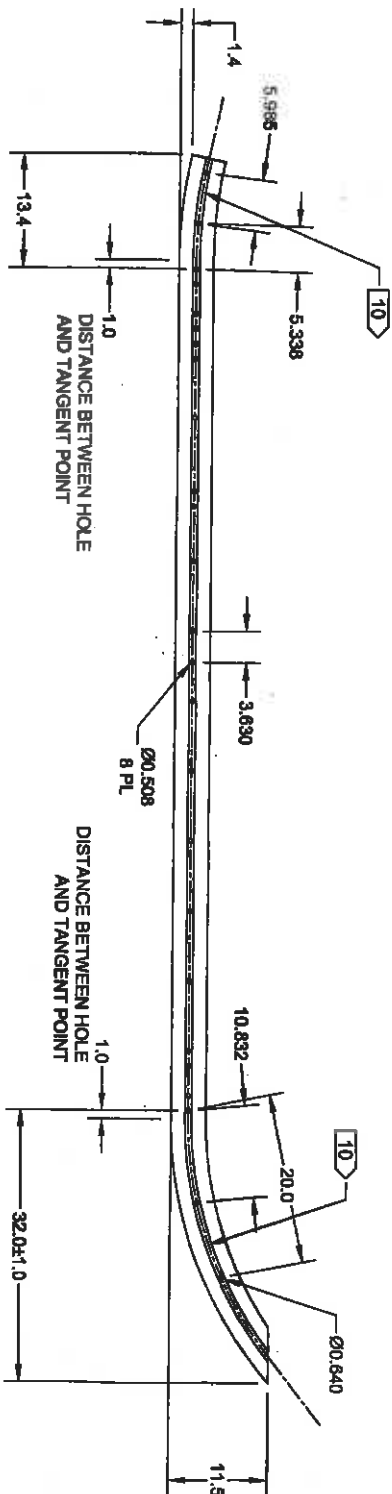
DISTANCE BETWEEN HOLE
AND TANGENT POINT

32.0±1.0

DESIGN	DS	DART AEROSPACE LTD
DRAWN	AS	HAMMERSLEY, ONTARIO, CANADA
CHECKED	9/	DRAWING NO.
MFG. APPR.	10/	D2580
APPROVED	11/	TITLE
DE APPR.	12/	205 SKIDTUBE ASSEMBLY
DATE	14.04.09	SCALE
		NTS

RELEASED
2014-04-28

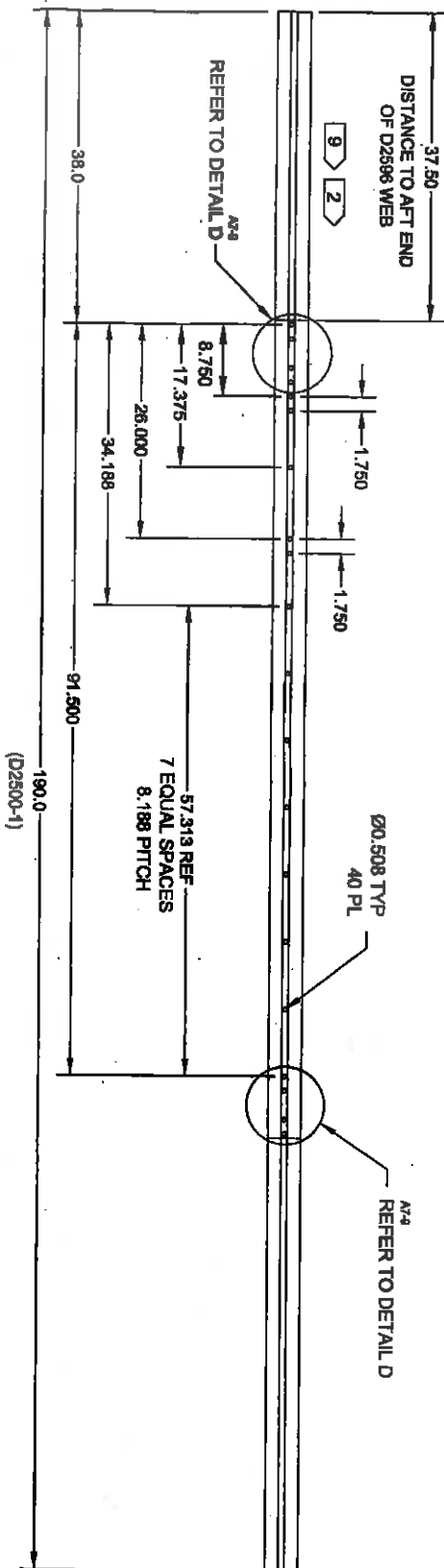




D2580-7 BENT TUBE
(MAKE FROM D2580-101 TUBE)

DESIGN	DS	DART AEROSPACE LTD
DRAWN	ALS	HAWKESBURY, ONTARIO, CANADA
CHECKED	AL	
MFG. APPR.	AL	REV. G
APPROVED	MD	SHEET 8 OF 9
DE APPR.	MD	SCALE
DATE	14.04.09	NTS
TITLE		
205 SKIDTUBE ASSEMBLY		
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THIS DOCUMENT IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE BY THE CANADIAN GOVERNMENT		

RELEASED
2014-04-29



D2580-101 TUBE

DETAIL D
C44
SCALE 5X

DESIGN	DS	DART AEROSPACE LTD
DRAWN	AJS	HAMMERSLEY, ONTARIO, CANADA
CHECKED	AP	DRAWING NO.
MFG. APPR.	AP	D2580
APPROVED	AP	REV. G
DATE	14.04.09	205 SKIDTUBE ASSEMBLY
		SCALE
		NTS

RELEASED
2014-04-29

